USDA United States Department of Agriculture

Natural Resources Conservation Service

Idaho Basin Outlook Report April 1, 2000

Basin Outlook Reports
and
Federal - State - Private
Cooperative Snow Surveys

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Internet Web Address
http://idsnow.id.nrcs.usda.gov/

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

IDAHO WATER SUPPLY OUTLOOK REPORT

April 1, 2000

SUMMARY

After a slow start, the winter of 1999-2000 is turning out to be a fairly normal year across the state. The snowpack ranges from 80-100% of average throughout Idaho. Streamflow forecasts range from near normal in northern Idaho to 65% in parts of the Big Wood and Bear River basins. Even with below normal snowmelt runoff volumes this summer, Idaho water users should have an adequate water supply as a result of the good reservoir carryover storage from last year.

SNOWPACK

Several days of warm weather in late March and early April, and a record high temperature of 79 degrees Fahrenheit in Boise on April 4, provided enough energy to start melting the low and mid-elevation snowpack. The snow water content amounts are peaking in the 80-100% of average range throughout most of Idaho. However, additional snow and cooler weather can still occur in April and early May, especially in the higher elevations. This is the first time in a while that snowpacks are fairly consistent across the state. Usually, as storms track across the state, either northern or southern Idaho receives more snow than the other half. The La Nina weather event did not bring above normal snowfall as it has in the past, but the storms that tracked across southern Idaho in January and February raised the hopes of many water users in southern Idaho.

PRECIPITATION

Only the Panhandle received normal precipitation in March. Elsewhere in the state, precipitation was 70-80% of average. Water year to date precipitation is the highest in the Panhandle Region at 108% of average, followed closely by the Clearwater basin at 105%. The lowest water years to date precipitation amounts are 77% of average in the upper Snake and Bear River basins. Warm temperatures this winter brought rain in the valleys instead of snow. Craters of the Moon, located at 5,900 feet, received rain in January which is unusual.

RESERVOIRS

Reservoir storage is in good shape across the state. Most reservoirs are 70-80% full. The exceptions are Salmon Falls Reservoir, which is 35% full, 99% of average, and Oakley Reservoir, which is 57% full, 130% of average. Releases are being made from some reservoirs to maintain adequate storage space for when the streamflows start increasing later this month.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive and in some cases dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

STREAMFLOW

The highest streamflow forecasts range from 95-105% of average for streams in the west-central mountains to the Panhandle Region. The lowest forecasts in the State are in the 65-75% of average range for the Big Wood, Little Wood, Goose Creek (Oakley), Salmon Falls, Bruneau and Bear River basins. The Snake River at Heise is forecast at 86% of average while American Falls inflow is forecast at 81%. Unless this spring and summer are extremely dry and the snowmelt is gradual and allows the melt water to go into the ground instead of resulting in streamflow, water supplies will be adequate in Idaho. The scenario just mentioned is what occurred in 1989, another La Nina type year. In 1989, the snowpack was near normal across the state, however, the resulting streamflow was below normal due to a dry spring and because 1989 followed several drought years. Currently, we are in a "wet cycle." Many springs and deep moisture in the soil profile have been recharged as a result of the past five years of average or better snowpacks in Idaho. Soil moisture in the growing root zone is dry after last year's dry summer and fall.

RECREATION

A near normal snowpack in the second half of winter provided excellent winter recreation opportunities in Idaho. The snowpack is just starting to melt in mid-elevation areas but will provide an excellent spring skiing season. Summer water-based recreational activities should also be excellent in Idaho this summer. A near normal snowpack with near normal streamflow projected will allow river runners to put on the river earlier than last year. The potential for high flows still exists; however, the high water season will be of shorter duration due to the fact that snowpacks are only 80-100% of average. Last year at this time, snowpacks were 130-160% of average and at record high levels in the west-central and northern Idaho mountains.

River runners and water managers can find useful snowmelt/streamflow relationship information on our Water Supply, Peak Steamflow Information Web page. We have attempted to summarize some of the rule of thumb analysis that we have developed over the years. For example, the Middle Fork Salmon River, on average, peaks about when Banner Summit SNOTEL site reaches half-melt. Current weather conditions can change this relationship. For more information, see the Peak Streamflow Information Section on this page: http://idsnow.id.nrcs.usda.gov/snow/water.htm

NEW SNOW DEPTH RECREATION REPORT AVAILABLE ON OUR WEB PAGE!
The past three years we have installed, with our cooperators support, about 20 snow depth sensors at SNOTEL sites throughout the state. We plan to install more depth sensors as personnel and funds become available. Following is the Idaho Snow Depth Recreation Report. This report is available and summarizes much of the information available on our Snow Recreation Web page: http://idsnow.id.nrcs.usda.gov/snow/recreation.html

We plan to update this report on Wednesday and Friday mornings for the remainder of this season. This report provides: current depth, average depth, percent of average, density of the snowpack, one-day and five-day change in snow depth, and the previous day's maximum and minimum air temperature. The snow depth data provides another piece of information about the snowpack and conditions that users can easily interpret. This new sensor allows us to determine new snowfall amounts rather than estimating, determine density to monitor when the snow is ripe and ready to melt, and provides another parameter to use as verification of the snow at our remote automated weather stations.

United States Department of Agriculture | Natural Resources Conservation Service | Boise, Idaho Snow Survey Data Collection Office

IDAHO SNOW RECREATION REPORT

Data from NRCS SNOTEL Sites - Based on Midnight Readings

As of: April 7, 2000

SNOTEL SITENAME	ELEV. (Ft)	NEAREST GEOGRAPHIC FEATURE	TODAY'S SNOW DEPTH (INCHES)	TODAY'S AVERAGE SNOW DEPTH (INCHES)	SNOW DEPTH PERCENT OF AVERAGE	SNOW-PACK DENSITY (% WATER)	CHANGE IN SNOW DEPTH (LAST 24 HOURS)	CHANGE IN SNOW DEPTH (LAST 5 DAYS)	YESTERDAY'S AIR TEMPERATURE (DEGREES FAHRENHEIT)	
									Max.	Min.
Idaho										
BEAR MOUNTAIN	5400	Clark Fork	148.6	144	103%	40%	9.5	6.2	33	21
CREATER MEADOWS	5690	Kelly RS	112.8	114	99%	47%	4.1	-2.5	29	20
ELK BUTTE	5550	Elk River	NA	107	-----	NA	NA	NA	NA	NA
HEMLOCK BUTTE	5810	Pierce	127.0	129	98%	37%	9.2	2.6	29	24
LOLO PASS	5240	Powell RS	75.7	80	95%	41%	3.3	-2.6	34	25
SHANGHI SUMMIT	4570	Pierce	76.4	61	125%	40%	3.9	-1.6	35	29
ATLANTA SUMMIT	7580	Atlanta	72.6	88	82%	36%	0.1	-5.8	36	22
BOGUS BASIN	6340	Bogus Basin Ski Area	62.4	NA	-----	41%	-0.5	-8.6	41	30
GRAHAM GUARD STA	5690	Graham GS	21.5	38	57%	51%	0.1	-6.0	44	22
JACKSON PEAK	7070	Jackson Pk Lookout	68.6	85	81%	40%	1.7	-3.5	38	19
MORES CREEK SUMMIT	6100	Idaho City	72.5	79	92%	41%	0.3	-6.1	44	27
SOLDIER RS	5740	Soldier Mnt Ski Area	15.4	21	73%	42%	-1.4	-7.8	48	32
DOLLARHIDE SUMMIT	8420	Warm Springs Creek	65.6	72	91%	34%	-0.3	-3.9	34	21
GALENA SUMMIT	8780	Galena Hwy Pass	52.4	58	91%	36%	-0.2	-4.2	29	17
VIENNA MINE	8960	Smiley Creek	77.7	NA	-----	39%	1.7	-3.3	29	16
SOUTH MOUNTAIN	6500	Silver City	19.0	39	48%	51%	-2.8	-12.4	50	27
MAGIC MOUNTAIN	6880	Magic Mnt Ski Area	41.5	51	82%	38%	-1.2	-7.0	47	28
FRANKLIN BASIN	8040	Preston	57.7	74	78%	41%	-0.7	-6.1	38	28
ISLAND PARK	6290	Island Park Resv Dam	34.6	44	79%	38%	-0.6	-5.5	47	28
TOGWOTEE PASS, WY	9580	Togwotee Hwy Pass	69.6	71	98%	32%	7.5	4.3	31	15
GUNSIGHT PASS, WY	9820	Green River Lakes	46.2	NA	-----	29%	5.1	3.7	28	14

Notes:

-- "NA" denotes data are Not Available for this parameter on this report or data are missing.

-- Data are provisional and subject to revision.

-- Snow depth and changes in snow depth are reported in inches.

-- Average snow depth is estimated from historical density data at the nearest snow course.

-- Snowpack density, as used in this report, is a measure of the firmness of the entire snow profile. It is simply the water content of the snowpack divided by the depth of the snowpack. New snowfall has an average density of 10%, for example, 1 inch of snow water equals 10 inches of depth. Density of new snowfall can be estimated by dividing the increase in snow water content by the change in snow depth. Density, in a recreational context, can be used by the recreationist to assess how powdery or firm the snowpack is on a given day. Over the course of the winter density will vary from about 10% in the early season to greater than 40% in the late season just prior to and during meltout. Some general rules of thumb follow:

-- less than 10% is new snow
==> travel through not on top of snow,

-- 10 to 25% is cold, early season snowpack and/or a large proportion of the snowpack is new snow
==> travel is possible but difficult,

-- 25 to 35% is a maturing snowpack where the proportion of new snow to overall depth is relatively small
==> travel by ski, snowshoe or oversnow vehicle is relatively easy,

-- 35 to 45% is a mature snowpack where the onset of melt is possible with minimal additional energy input
==> the snowpack is firm enough to walk on without snowshoes or skis,

-- greater than 45% is a snowpack that is ready to melt or is melting
==> travel by foot is difficult and post-holing may occur.

For additional information or current conditions, refer to our Internet Web Page at http://idsnow.id.nrcs.usda.gov

IDAHO SURFACE WATER SUPPLY INDEX (SWSI)
As of April 1, 2000

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences.

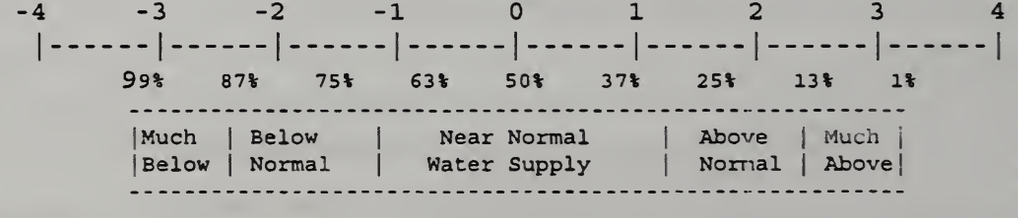
SWSI values are published January through May, and provide a more comprehensive outlook of water availability than either streamflow forecasts or reservoir storage figures alone. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been established for most basins to indicate the potential for agricultural water shortages.

The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

US Department of Commerce, National Weather Service
US Bureau of Reclamation
Idaho Water Users Association
US Army Corps of Engineers
Idaho Department of Water Recourses
PacifiCorp

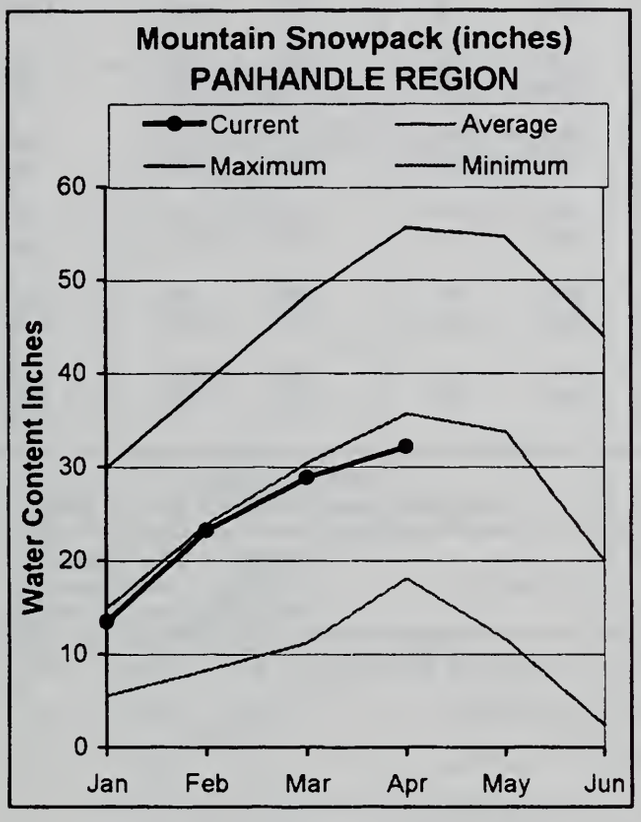
BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
PANHANDLE	-0.4	1993	NA
CLEARWATER	1.0	1990	NA
SALMON	-0.3	1980	NA
WEISER	-0.2	1986	NA
PAYETTE	0.1	1981	NA
BOISE	-0.3	1993	-2.6
BIG WOOD	-0.8	1981	-1.4
LITTLE WOOD	-0.2	1996	-2.1
BIG LOST	-1.0	1985	-0.8
LITTLE LOST	-0.7	1996	0.0
HENRYS FORK	-0.6	1989	-3.3
SNAKE (AMERICAN FALLS)	0.7	1995	-2.0
OAKLEY	1.3	1996	0.0
SALMON FALLS	0.7	1987	0.0
BRUNEAU	-1.6	1994	NA
OWYHEE	0.0	1998	NA
BEAR RIVER	-0.1	1999	-3.8

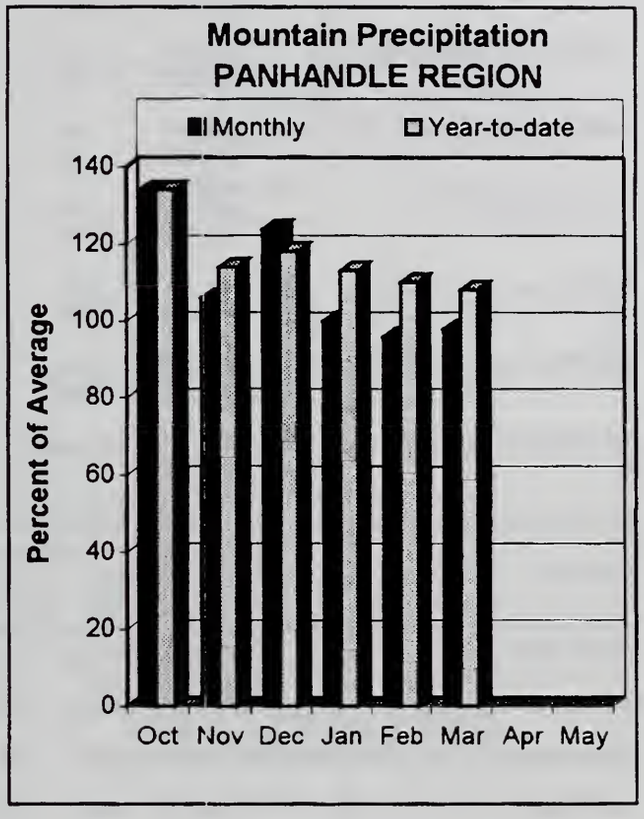
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION



Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply", represents three SWSI units and would be expected to occur about one third (36%) of the time.

PANHANDLE REGION
APRIL 1, 2000





WATER SUPPLY OUTLOOK

March continued the trend of receiving near normal precipitation or better for the sixth month in a row. March precipitation was 98% of average. Precipitation for the water year is 108% of average, the highest in the state. The highest snowpacks in the state are also in the Panhandle Region. The snowpacks in the Rathdrum Creek and Hayden Lake areas are 127% of average. The Coeur d'Alene River basin is 101% of average. The lowest snowpacks in this region are 90% of average for the Kootenai, Moyie, Pend Oreille and St. Joe basins. Last year the snowpacks were at record high levels at 130-160% of average. Storage in the natural lakes and reservoirs is near normal. Streamflow forecasts call for near normal runoff and will provide adequate water supplies for the numerous water uses.

PANHANDLE REGION
Streamflow Forecasts - April 1, 2000

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KOOTENAI at Leonia (1,2)	APR-JUL	6245	7191	7620	106	8049	8995	7199
	APR-SEP	7180	8267	8760	106	9253	10340	8275
CLARK FK at Whitehorse Rpds (1,2)	APR-JUL	7990	9647	10400	89	11153	12810	11730
	APR-SEP	8748	10572	11400	88	12228	14052	12910
PRIEST near Priest River (1,2)	APR-JUL	759	849	890	110	931	1021	812
	APR-SEP	791	890	935	108	980	1079	865
COEUR D'ALENE at Enaville	APR-JUL	655	741	800	104	859	945	769
	APR-SEP	689	779	840	104	901	991	809
ST.JOE at Calder	APR-JUL	930	1033	1103	94	1173	1276	1169
	APR-SEP	977	1083	1155	93	1227	1333	1237
SPOKANE near Post Falls (2)	APR-JUL	2182	2461	2650	101	2839	3118	2627
	APR-SEP	2192	2483	2680	99	2877	3168	2720
SPOKANE at Long Lake	APR-JUL	2394	2731	2960	102	3189	3526	2905
	APR-SEP	2591	2948	3190	102	3432	3789	3128

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2226.0	1946.0	2046.0
FLATHEAD LAKE	1791.0	687.1	792.2	751.9
NOXON RAPIDS	335.0	323.4	315.4	231.3
PEND OREILLE	1561.3	756.0	950.0	796.0
COEUR D'ALENE	238.5	171.5	236.5	170.1
PRIEST LAKE	119.3	50.0	56.0	61.9

PANHANDLE REGION
Watershed Snowpack Analysis - April 1, 2000

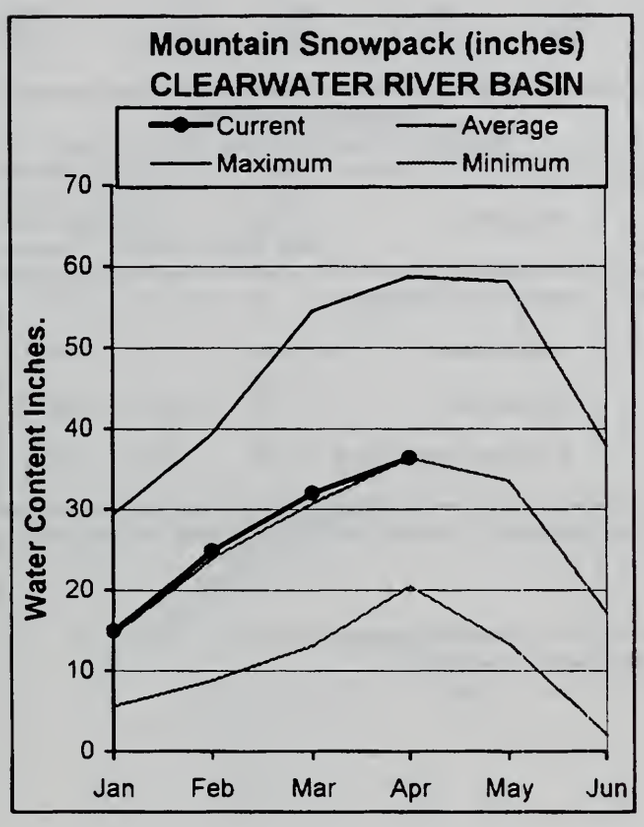
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	38	67	90
Moyie River	12	66	91
Priest River	5	65	105
Pend Oreille River	108	75	90
Rathdrum Creek	4	92	130
Hayden Lake	2	82	126
Coeur d'Alene River	10	76	101
St. Joe River	5	71	92
Spokane River	18	79	105
Palouse River	2	84	112

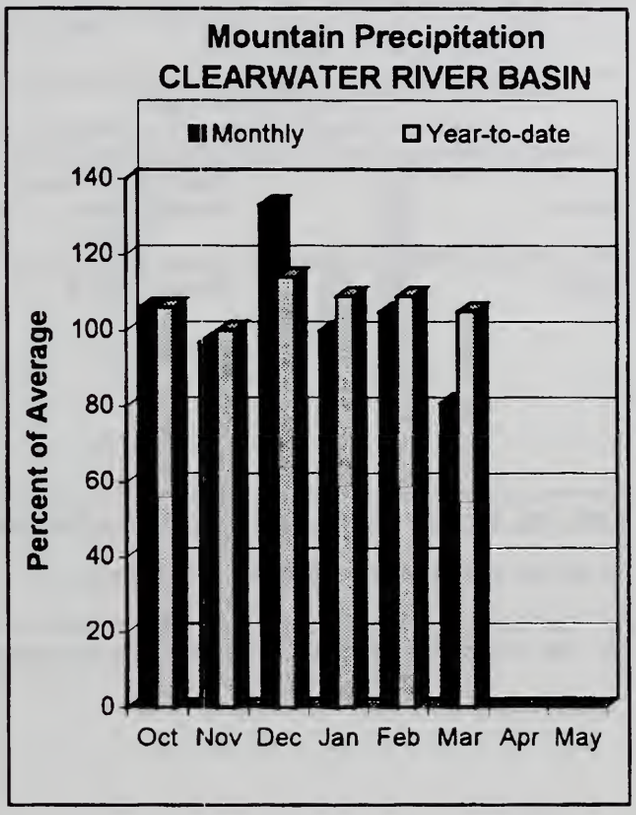
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

CLEARWATER RIVER BASIN
APRIL 1, 2000





WATER SUPPLY OUTLOOK

Monthly precipitation was below normal for the first time since last September. March precipitation was 81% of average. Precipitation for the water year is slightly above average at 105%. Snowpack percentages range from 112% for the Palouse and Moscow Mountain area to 94% for the Lochsa River basin. Overall, the Clearwater basin is 97% of average. Dworshak Reservoir remains at about two-thirds full, which is slightly above normal, in order to maintain room for the near normal runoff volumes. Dworshak Reservoir inflow is forecasted at 99% of average while the Clearwater at Spalding is forecast at 97%. The Snake River below Lower Granite Dam is forecast at 89% of average. With a near normal snowpack or better, four of the past five years, water supplies will be plentiful again. River runners should have a good boating season after the peak flows have subsided.

CLEARWATER RIVER BASIN
Streamflow Forecasts - April 1, 2000

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
DWORSHAK RESV INFLOW (1,2)	APR-JUL	2112	2496	2670	99	2844	3228	2687
	APR-SEP	2266	2661	2840	99	3019	3414	2858
CLEARWATER at Orofino (1)	APR-JUL	3776	4315	4560	96	4805	5344	4729
	APR-SEP	3968	4547	4810	96	5073	5652	4990
CLEARWATER at Spalding (1,2)	APR-JUL	5981	6943	7380	97	7817	8779	7618
	APR-SEP	6335	7342	7800	97	8258	9265	8051

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	2266.8	1554.8	2093.0

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - April 1, 2000

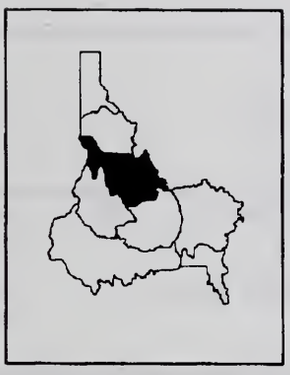
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	74	100
Lochsa River	4	73	94
Selway River	6	81	96
Clearwater Basin Total	19	76	97

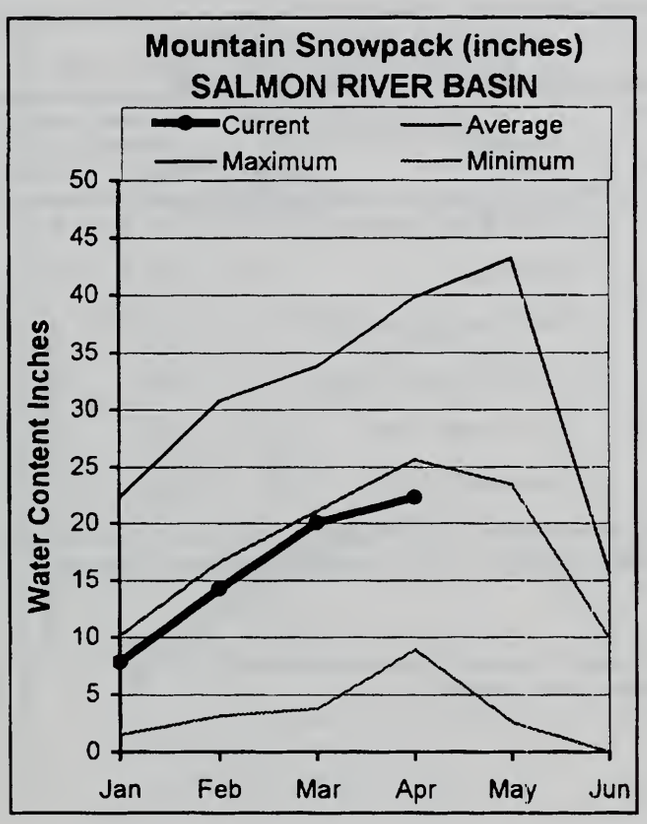
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

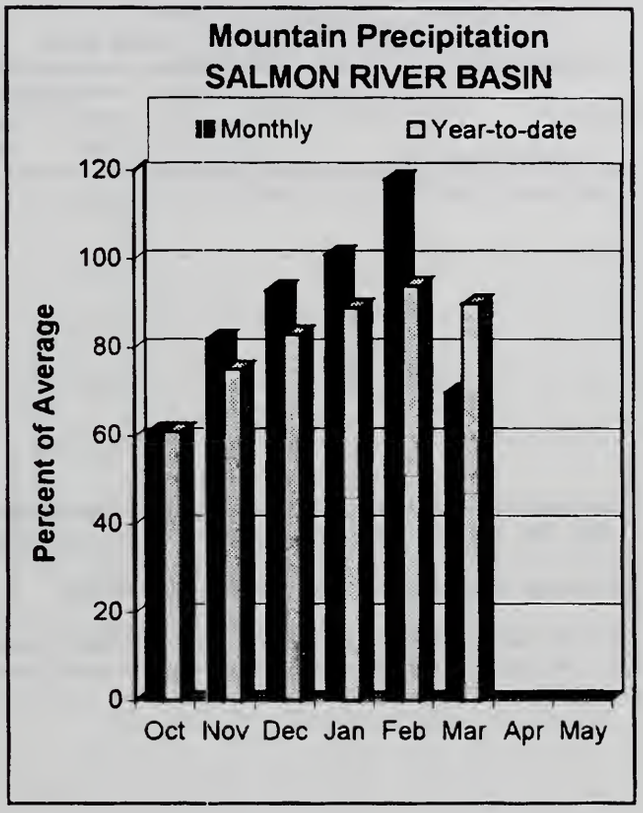
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

SALMON RIVER BASIN
APRIL 1, 2000







WATER SUPPLY OUTLOOK

Monthly precipitation was 70% of average and stands at 90% for the water year. The Salmon River snowpack is fairly consistent across the basin and ranges from 90% of average in the Little Salmon River to 84% in the Middle Fork Salmon River. Overall, the Salmon River basin snowpack is 87% of average. A year ago the snow was 120% of average. The Salmon River above Salmon is forecast at 90% while the Salmon River at White Bird is forecast at 93%. The slightly below normal snowpacks should provide a good boating season for river runners. As with any year that has a near normal snowpack, there is the potential for high peak flows which are dependent upon precipitation and sustained hot temperatures during the snow melt season. However, the high water season will be of shorter duration than last year and allow boaters to put on the river earlier than last year.

SALMON RIVER BASIN
Streamflow Forecasts - April 1, 2000

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	APR-JUL	612	728	780	90	832	948	869
	APR-SEP	728	857	915	90	973	1102	1019
SALMON at White Bird (1)	APR-JUL	4416	5189	5540	93	5891	6665	5956
	APR-SEP	4891	5750	6140	93	6530	7389	6602

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN
Watershed Snowpack Analysis - April 1, 2000

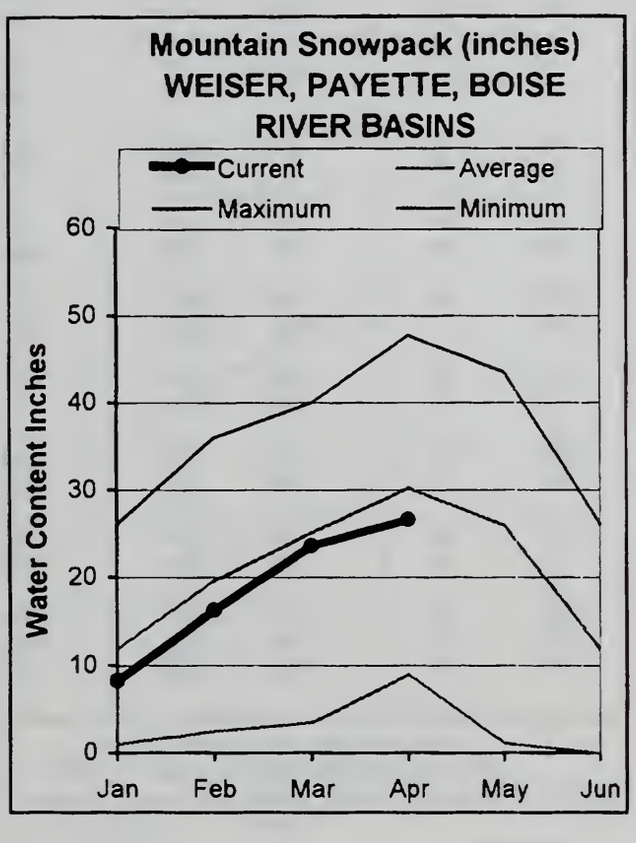
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	11	74	88
Lemhi River	11	82	86
Middle Fork Salmon River	3	67	84
South Fork Salmon River	3	66	87
Little Salmon River	4	62	90
Salmon Basin Total	32	72	87

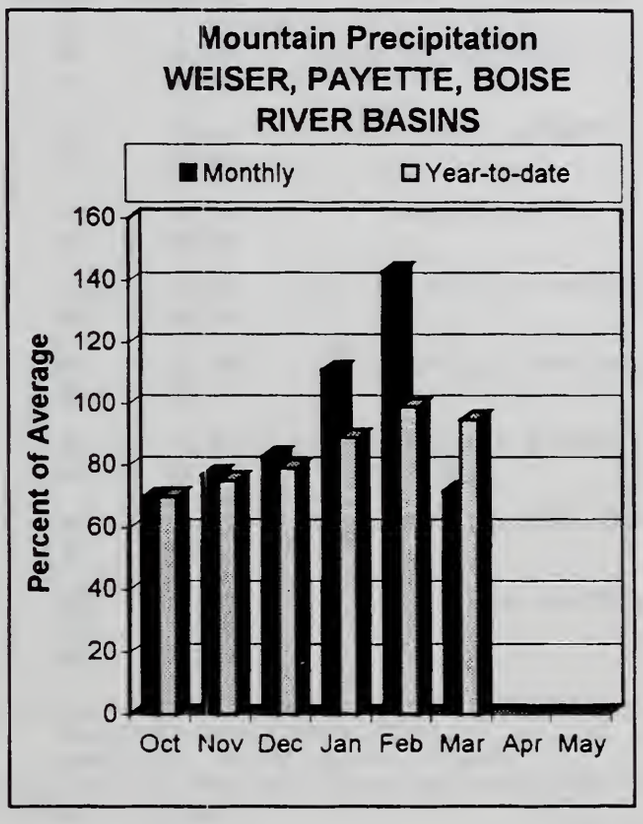
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS
APRIL 1, 2000





WATER SUPPLY OUTLOOK

March mountain precipitation was 72% of normal and is 95% of normal for the water year. The snowpack ranges from 91% of average in the Weiser and North Fork Payette basins to 79% in the South Fork Payette basin. Overall, the snowpack in the Boise basin is 88% of average. Streamflow forecasts remain about the same as last month and call for 99% of average for the Weiser River, 97% for the Payette River at Horseshoe Bend, and 81% for the Boise River near Boise. The Payette and Boise reservoir storage systems are about 75% of capacity which are about 120% of average. Outflows were increased from Lucky Peak last month and will increase again as the snow starts melting and filling the rivers. Water supplies will be adequate.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - April 1, 2000

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WEISER nr Weiser (1)	APR-SEP	237	356	410	99	464	583	415
SF PAYETTE at Lowman	APR-JUL	339	375	399	92	423	459	432
	APR-SEP	384	425	452	93	479	520	488
DEADWOOD RESERVOIR Inflow (1,2)	APR-JUL	100	116	123	91	130	146	135
	APR-SEP	105	122	129	90	136	153	143
LAKE FORK PAYETTE near McCall	APR-JUL	69	76	81	97	87	94	84
	APR-SEP	72	80	85	97	90	98	88
NF PAYETTE nr Cascade (1,2)	APR-JUL	376	456	492	99	528	608	496
	APR-SEP	400	487	526	99	565	652	533
NF PAYETTE nr Banks (2)	APR-JUL	513	589	640	99	691	767	648
	APR-SEP	542	625	681	99	737	820	690
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL	1267	1475	1570	97	1665	1873	1618
	APR-SEP	1365	1596	1700	97	1804	2035	1755
BOISE near Twin Springs (1)	APR-JUL	449	518	550	87	582	651	631
	APR-SEP	485	561	595	87	629	705	686
SF BOISE at Anderson Ranch Dam (1,2)	APR-JUL	336	394	420	77	446	504	544
	APR-SEP	366	427	455	78	483	544	582
MORES CREEK near Arrowrock Dam	APR-JUL	84	99	110	85	121	136	129
	APR-SEP	87	103	114	85	125	141	134
BOISE near Boise (1,2)	APR-JUN	863	978	1030	82	1082	1197	1264
	APR-JUL	930	1081	1150	81	1219	1370	1421
	APR-SEP	1034	1196	1269	83	1342	1504	1535

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	10.8	9.0	8.4
CASCADE	703.2	510.7	386.0	392.5
DEADWOOD	161.9	121.3	86.7	90.4
ANDERSON RANCH	464.2	332.5	260.7	276.2
ARROWROCK	286.6	257.4	120.9	222.2
LUCKY PEAK	293.2	211.7	155.9	156.1
LAKE LOWELL (DEER FLAT)	177.1	112.4	140.2	140.8

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - April 1, 2000

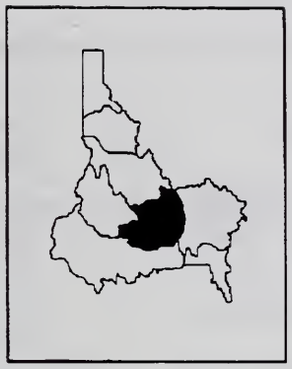
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	2	61	94
Weiser River	5	60	91
North Fork Payette	8	64	92
South Fork Payette	5	66	79
Payette Basin Total	14	66	89
Middle & North Fork Boise	6	73	88
South Fork Boise River	9	70	87
Mores Creek	5	67	92
Boise Basin Total	16	70	88
Canyon Creek	2	51	92

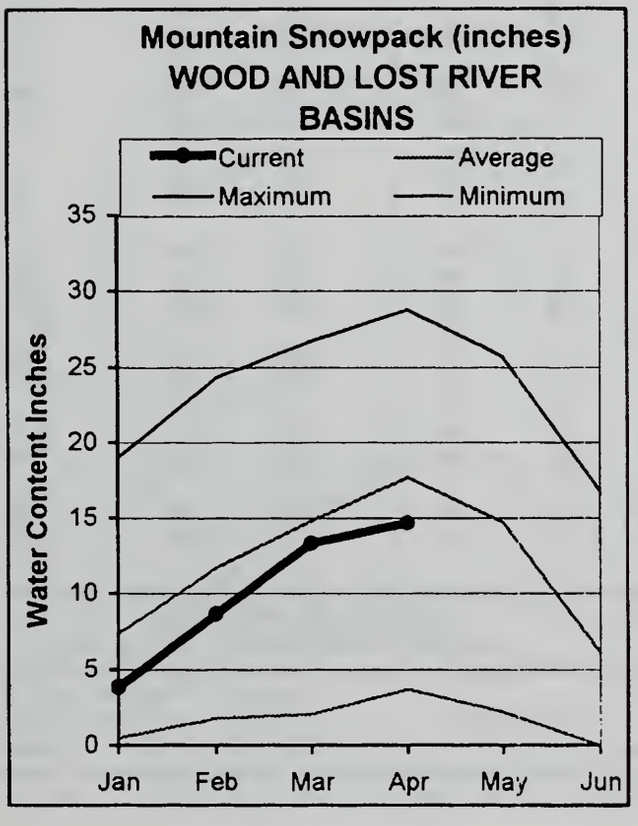
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

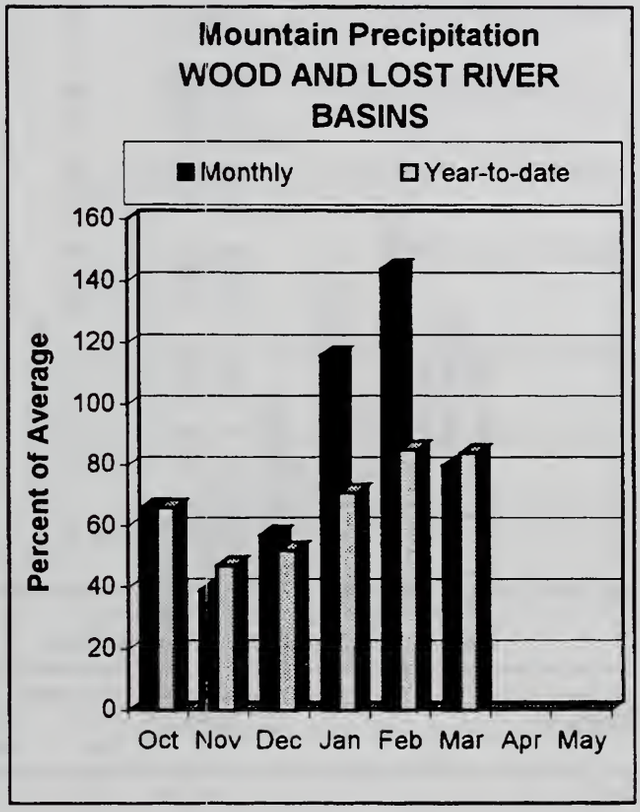
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WOOD and LOST RIVER BASINS
APRIL 1, 2000







WATER SUPPLY OUTLOOK

Precipitation was 80% of average in March and stands at 84% since October 1. The snowpacks are near normal in the Camas Creek drainage and are 85% of average for the Big Wood basin above Magic Reservoir. The snowpack decreases to about 80% of average in the Little Wood, Big Lost and Little Lost river basins. The snowpack in the Birch/Medicine Lodge Creeks area is 97% of average and decreases to 77% of average in the Camas-Beaver Creeks drainages. Warm weather is melting the snowpack in the lower elevations. The snowpack at Soldier Ranger Station SNOTEL is almost half-melted. On average, Camas Creek snowmelt peak flow occurs just prior to half-melt at Soldier RS. Reservoir storage increased from last month. Currently Magic Reservoir is 72% full, Mackay is 80% full, and Little Wood is 84% full. Streamflow forecasts remain near the lowest in the state at 60-75% of average in the Big Wood, Little Wood and Big Lost basins. Elsewhere forecasts range from 80-90% of average. The water supply situation has improved dramatically since January 1. Dry soil moisture still exists as a result of the very dry fall; additional spring precipitation will help overcome this moisture deficit and ensure an adequate water supply in these basins.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - April 1, 2000

Forecast Point	Forecast Period	<<== Drier == Future Conditions == Wetter ==>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BIG WOOD at Hailey (1)	APR-JUL	136	169	186	73	203	244	255
	APR-SEP	156	196	215	74	235	283	289
BIG WOOD near Bellevue	APR-JUL	72	92	106	58	121	146	183
	APR-SEP	79	99	114	58	130	155	197
CAMAS CREEK near Blaine	APR-JUL	60	70	78	77	86	98	102
	APR-SEP	60	70	78	76	86	98	103
BIG WOOD below Magic Dam (2)	APR-JUL	143	175	196	66	217	249	295
	APR-SEP	153	188	211	68	234	269	310
LITTLE WOOD near Carey (2)	APR-JUL	43	55	64	70	73	85	92
	APR-SEP	47	61	70	70	79	93	99
BIG LOST at Howell Ranch	APR-JUN	86	103	114	81	125	142	141
	APR-JUL	105	128	143	79	158	181	181
	APR-SEP	121	146	164	80	182	207	206
BIG LOST below Mackay Reservoir (2)	APR-JUL	75	98	114	75	130	153	152
	APR-SEP	90	116	134	73	152	178	184
LITTLE LOST blw Wet Creek	APR-JUL	20	24	27	88	30	34	31
	APR-SEP	25	30	34	88	38	44	39
LITTLE LOST nr Howe	APR-JUL	25	28	30	91	32	35	33
	APR-SEP	32	36	39	91	42	46	43

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	137.7	101.6	113.2
LITTLE WOOD	30.0	25.2	7.5	19.2
MACKAY	44.4	35.4	31.2	33.1

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - April 1, 2000

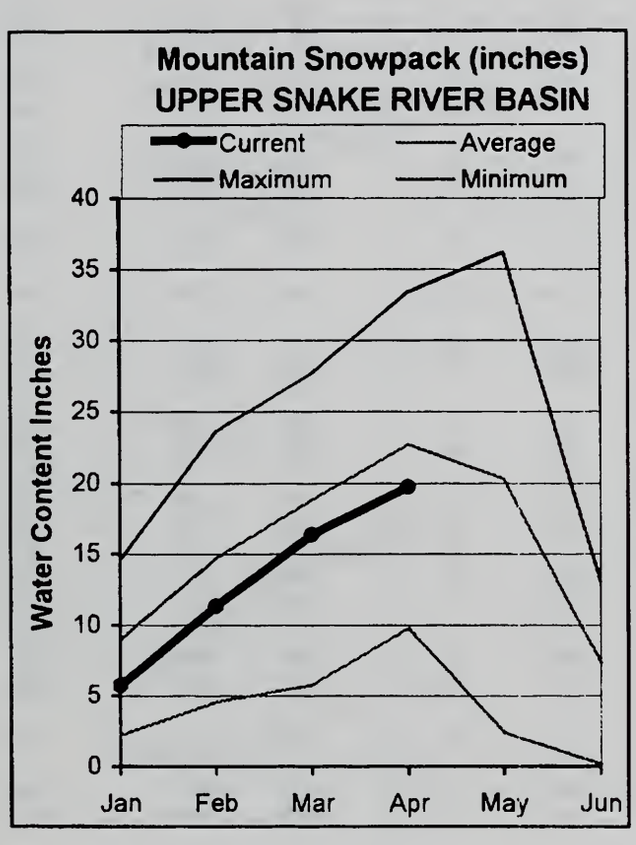
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Magic	8	75	85
Camas Creek	5	63	97
Big Wood Basin Total	13	72	88
Little Wood River	5	69	79
Fish Creek	3	66	79
Big Lost River	7	70	81
Little Lost River	4	71	79
Birch-Medicine Lodge Cree	4	81	97

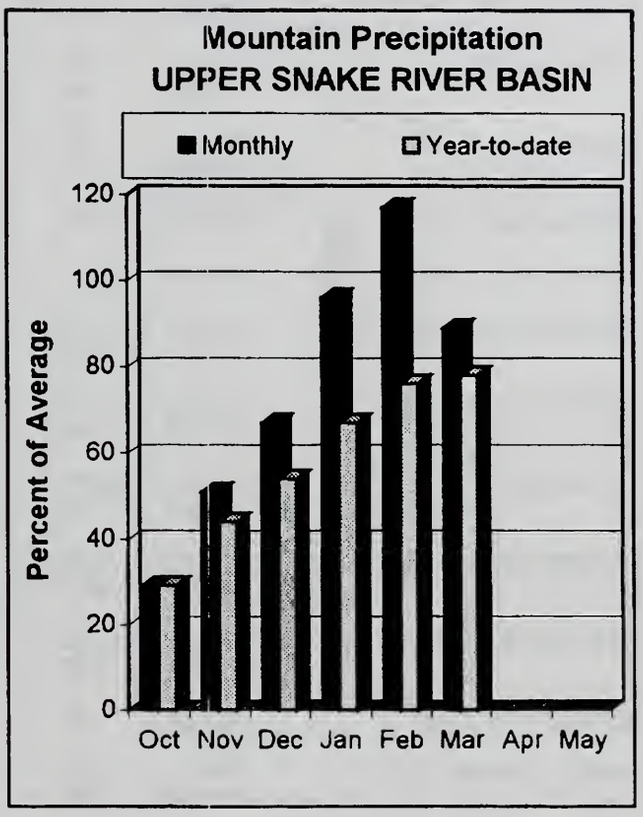
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

UPPER SNAKE RIVER BASIN
APRIL 1, 2000





WATER SUPPLY OUTLOOK

March precipitation ranged from 75-105% of average for most SNOTEL sites in the basin. Overall, precipitation for March was 89% and is 78% for the water year. The snowpack is fairly consistent throughout the upper Snake basin ranging from 77% of average in the Camas/Beaver Creek drainages to 90% in the Greys, Willow and Portneuf basins. The snowpack for the entire basin above American Falls Reservoir is 88% of average. Combined reservoir storage for the 8 major reservoirs is 88% of capacity, 117% of average. Streamflow forecasts range from 80-100% of average. Even with a below normal snowpack, and thus below normal runoff volumes, water users will have an adequate water supply due to the good reservoir storage.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - April 1, 2000

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HENRYS FORK near Ashton (2)	APR-JUL	424	469	500	92	531	576	544
	APR-SEP	578	633	670	92	707	762	730
HENRYS FORK near Rexburg (2)	APR-JUL	914	1052	1145	93	1238	1376	1228
	APR-SEP	1156	1313	1420	92	1527	1684	1551
FALLS near Squirrel (1,2)	APR-JUL	278	324	345	95	366	412	364
	APR-SEP	348	394	415	96	436	482	432
TETON near Driggs	APR-JUL	121	141	155	102	169	189	152
	APR-SEP	161	186	203	102	220	245	199
TETON near St. Anthony	APR-JUL	280	328	360	96	392	440	377
	APR-SEP	341	395	432	95	469	523	457
SNAKE near Moran (1,2)	APR-SEP	604	701	745	86	789	886	869
PACIFIC CREEK at Moran	APR-SEP	106	124	136	82	148	166	166
SNAKE above Palisades (2)	APR-JUL	1807	1939	2029	88	2119	2251	2311
	APR-SEP	2054	2215	2325	87	2435	2596	2671
GREYS above Palisades	APR-JUL	222	251	270	81	289	318	333
	APR-SEP	256	288	310	80	332	364	388
SALT near Etna	APR-JUL	188	228	255	80	282	322	319
	APR-SEP	241	288	319	80	350	397	399
PALISADES RESERVOIR INFLOW (1,2)	APR-JUL	2308	2633	2780	86	2927	3252	3226
	APR-SEP	2649	3021	3190	85	3359	3731	3763
SNAKE near Heise (2)	APR-JUL	2563	2803	2967	86	3131	3371	3451
	APR-SEP	2980	3260	3450	85	3640	3920	4049
BLACKFOOT RESV INFLOW	APR-JUN	56	76	90	80	104	124	113
SNAKE nr Blackfoot (1,2)	APR-JUL	2993	3658	3960	89	4262	4927	4444
	APR-SEP	3757	4491	4825	88	5159	5893	5482
PORTNEUF at Topaz	APR-JUL	44	52	58	81	64	72	72
	APR-SEP	58	67	74	80	81	90	93
AMERICAN FALLS RESV INFLOW (1,2)	APR-JUL	1412	2153	2490	81	2827	3568	3066
	APR-SEP	1405	2282	2680	81	3078	3955	3303

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	87.7	85.6	80.3
ISLAND PARK	135.2	114.7	109.4	118.7
GRASSY LAKE	15.2	12.7	13.2	11.2
JACKSON LAKE	847.0	657.4	596.7	473.2
PALISADES	1400.0	1188.8	713.7	1014.0
RIRIE	80.5	50.0	52.1	39.5
BLACKFOOT	348.7	284.0	275.2	245.3
AMERICAN FALLS	1672.6	1647.6	1501.8	1462.0

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - April 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Camas-Beaver Creeks	4	73	77
Henrys Fork-Falls River	12	75	88
Teton River	8	81	88
Henrys Fork above Rexburg	20	77	88
Snake above Jackson Lake	9	73	87
Gros Ventre River	3	74	82
Hoback River	6	79	83
Greys River	4	88	90
Salt River	5	90	95
Snake above Palisades	30	78	88
Willow Creek	7	83	90
Blackfoot River	5	90	88
Portneuf River	6	87	91
Snake abv American Falls	45	80	88

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table. The average is computed for the 1961-1990 base period.
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
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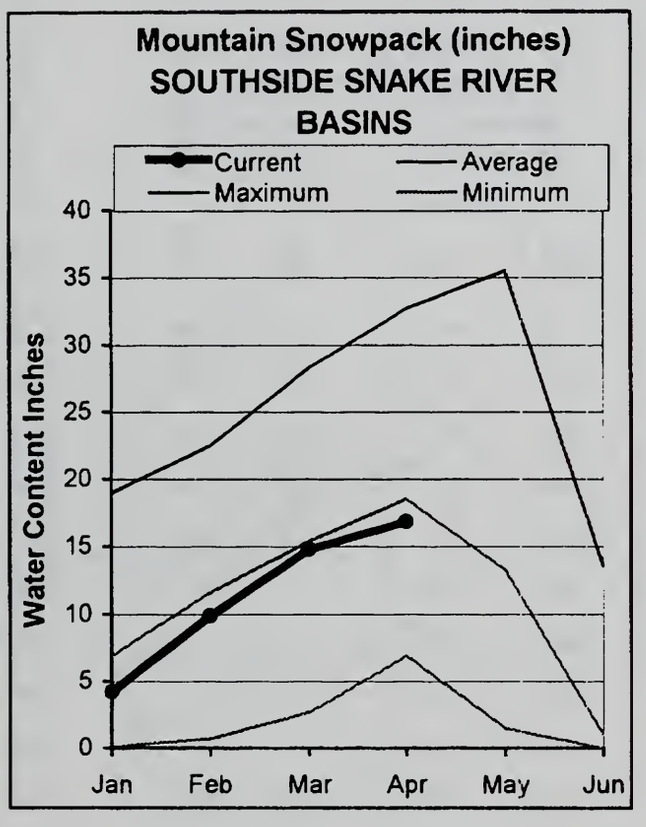
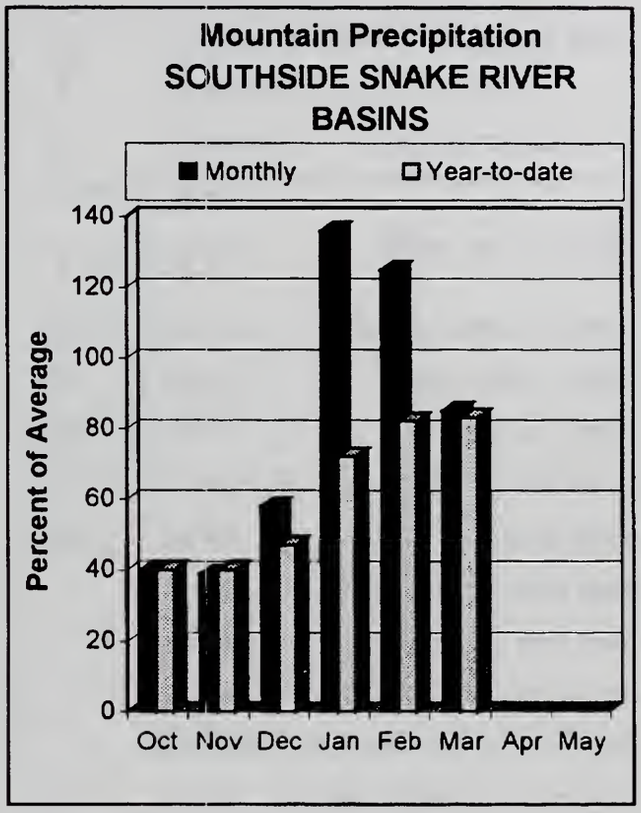
SOUTHSIDE SNAKE RIVER BASINS
APRIL 1, 2000





WATER SUPPLY OUTLOOK

Precipitation was 85% of average in March and is 83% of average for the water year. Snowpack levels are about the same or slightly less than last year; however, soil moisture conditions are less as a result of the extremely dry fall. The snowpack is normal in the Owyhee, Bruneau and Raft River basins. Elsewhere, the snowpack is 96% of average for the Oakley Reservoir basin and is 82% in the Salmon Falls basin. Reservoir storage varies from one-third full for Salmon Falls Reservoir to three-quarters full for Wildhorse, Brownlee and Owyhee reservoirs. However, all reservoirs are currently storing near average or better amounts. Forecast range from 70-100% of average. Agricultural water users in these basins should have an adequate water supply based upon the Most Probable Forecasts (50% Chance of Exceedance). Many shareholders have carryover water from last year to use as well. Water supplies may be marginal for the Salmon Tract users if the Reasonable Minimum Forecast (90% Chance of Exceeding) occurs. River runners should have an adequate boating season, but the floating season in these high desert streams is much like farming, and very dependent upon Mother Nature and spring precipitation.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - April 1, 2000

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
OAKLEY RESV INFLOW	APR-JUL	11.9	16.0	19.0	69	22	28	28
	APR-SEP	13.7	18.0	21	69	25	31	31
OAKLEY RESV STORAGE	APR-30	43	45	46	121	47	49	38
	MAY-31	42	45	48	118	51	54	41
	JUN-30	32	38	42	114	45	51	37
SALMON FALLS CREEK nr San Jacinto	APR-JUN	33	43	51	69	60	74	74
	APR-JUL	34	45	54	68	64	79	79
	APR-SEP	36	48	57	68	67	82	84
SALMON FALLS RESV STORAGE	APR-30	71	76	79	95	82	86	83
	MAY-31	71	79	85	91	91	99	93
	JUN-30	34	47	56	63	65	78	89
BRUNEAU near Hot Springs	APR-JUL	90	122	146	70	172	215	209
	APR-SEP	96	130	155	70	183	228	221
OWYHEE near Gold Creek (2)	APR-JUL	10.9	16.5	21	84	26	34	25
OWYHEE nr Owyhee (2)	APR-JUL	36	56	70	81	84	104	86
OWYHEE near Rome	APR-JUL	260	333	388	103	447	542	377
OWYHEE RESV INFLOW (2)	APR-JUL	278	348	400	103	456	544	390
SUCCOR CK nr Jordan Valley	APR-JUL	3.62	7.42	10.00	104	12.58	16.38	9.60
SNAKE RIVER at King Hill (1,2)	APR-JUL			1920	66			2896
SNAKE RIVER near Murphy (1,2)	APR-JUL			1990	67			2980
SNAKE RIVER at Weiser (1,2)	APR-JUL			3620	66			5465
SNAKE RIVER at Hells Canyon Dam (1,2	APR-JUL			4270	70			6129
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	14284	17665	19200	89	20735	24116	21650

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	74.5	42.8	48.2	33.0
SALMON FALLS	182.6	63.0	88.4	63.8
WILDHORSE RESERVOIR	71.5	51.3	62.5	38.2
OWYHEE	715.0	584.5	643.9	579.0
BROWNLEE	1419.3	1088.8	665.6	930.0

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - April 1, 2000

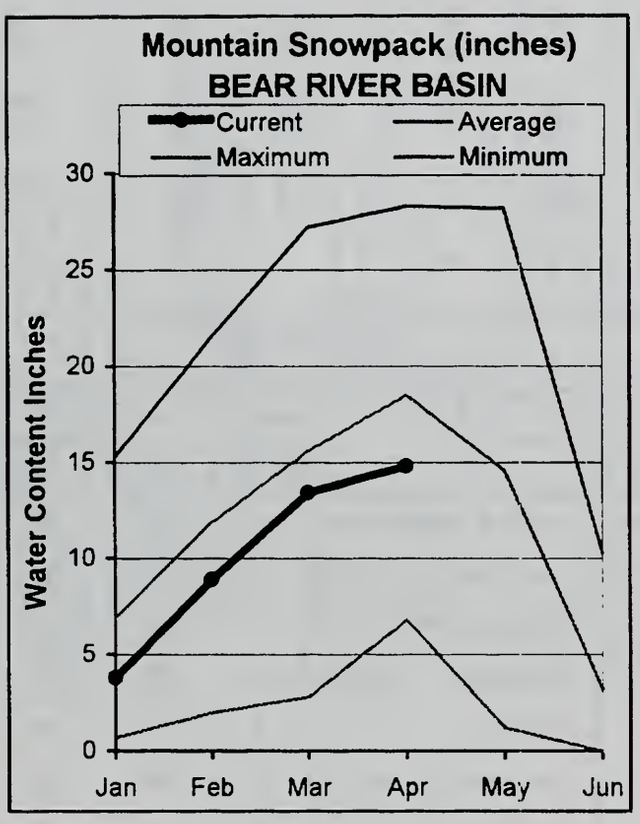
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	6	115	102
Goose-Trapper Creeks	7	105	96
Salmon Falls Creek	8	96	82
Bruneau River	8	115	99
Owyhee Basin Total	20	91	101

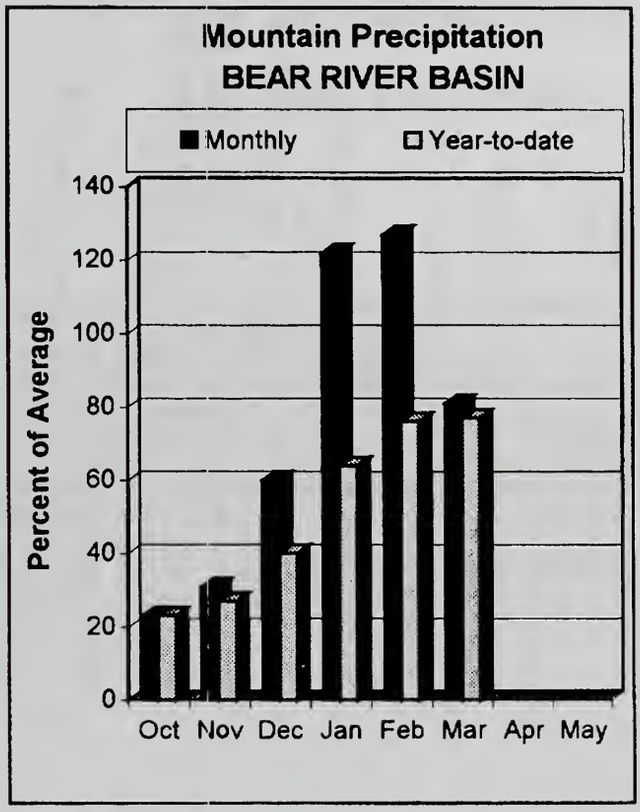
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

BEAR RIVER BASIN
APRIL 1, 2000





WATER SUPPLY OUTLOOK

Snow water content levels and water year to date precipitation is the lowest since 1994. March precipitation in the Bear River basin was 81% of average. Precipitation since this water year started is 77% of average. Snowpack percentages range from 77% of average in Montpelier Creek basin to 97% in Malad River basin. Overall, the Bear River basin snowpack is 82% of average. However, unlike 1994, reservoir storage is much better with both Bear Lake and Montpelier Creek storage at 78% of capacity. On March 31, 1994, Bear Lake storage was only 40% of capacity. Streamflow forecasts call for 64% of average for Thomas Fork and Montpelier Creeks. The Bear River below Stewart Dam is forecast at 70% of average. Streamflow runoff volumes will be below normal this summer, but water users should still have an adequate water supply as a result of the good reservoir storage.

BEAR RIVER BASIN
Streamflow Forecasts - April 1, 2000

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BEAR R nr Randolph, UT	APR-JUL	25	64	90	76	116	155	118
	APR-SEP	23	67	96	76	125	169	127
SMITHS FK nr Border, WY	APR-JUL	59	71	80	78	91	109	102
	APR-SEP	70	84	94	80	106	126	118
THOMAS FK nr WY-ID State Line (Disc.	APR-JUL	12.8	17.2	21	64	26	34	33
	APR-SEP	14.3	19.0	23	64	28	37	36
BEAR R blw Stewart Dam nr Montpelier	APR-JUL	110	165	202	70	239	294	288
	APR-SEP	125	187	230	70	273	335	327
MONTPELIER CK nr Montpelier (Disc)(2	APR-JUL	5.5	6.9	8.0	66	9.3	11.7	12.2
	APR-SEP	6.6	8.2	9.4	66	10.8	13.3	14.2
CUB R nr Preston	APR-JUL	23	28	32	68	36	41	47

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	1111.3	1095.3	998.0
MONTPELIER CREEK	4.0	3.1	2.7	1.5

BEAR RIVER BASIN
Watershed Snowpack Analysis - April 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	4	83	85
Bear River ab WY-ID line	14	87	82
Montpelier Creek	2	74	77
Mink Creek	4	92	84
Cub River	3	91	86
Bear River ab ID-UT line	25	88	82
Malad River	3	126	97

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Streamflow Adjustment List For All Forecasts Published In Idaho Basin Outlook Report Streamflow forecasts are projections of runoff volumes that would have occurred naturally without influences from upstream reservoirs or diversions. These values are referred to as natural or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made to each forecast point in this report. (Revised 1/2000).

Panhandle River Basins

KOOTENAI R AT LEONIA, ID
+ LAKE KOOCANUSA (STORAGE CHANGE)

CLARK FORK AT WHITEHORSE RAPIDS, ID
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS RESV (STORAGE CHANGE)

PEND OREILLE LAKE INFLOW, ID
+ PEND OREILLE R AT NEWPORT, WA
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS (STORAGE CHANGE
+ PEND OREILLE LAKE (STORAGE CHANGE)

PRIEST R NR PRIEST R, ID
+ PRIEST LAKE (STORAGE CHANGE)

COEUR D'ALENE R AT ENAVILLE, ID - No Corrections

ST. JOE R AT CALDER, ID - No Corrections

SPOKANE R NR POST FALLS, ID
+ COEUR D'ALENE LAKE (STORAGE CHANGE)

SPOKANE R AT LONG LAKE, WA
+ COEUR D'ALENE LAKE (STORAGE CHANGE)
+ LONG LAKE, WA (STORAGE CHANGE)

Clearwater River Basin

DWORSHAK RESERVOIR INFLOW, ID
+ DWORSHAK RESV (STORAGE CHANGE)
- CLEARWATER R AT OROFINO, ID
+ CLEARWATER R NR PECK, ID

CLEARWATER R AT OROFINO, ID - No Corrections

CLEARWATER R AT SPALDING, ID
+ DWORSHAK RESV (STORAGE CHANGE)

Salmon River Basin

SALMON R AT SALMON, ID - No Corrections

SALMON R AT WHITE BIRD, ID - No Corrections

Weiser, Payette, Boise River Basins

WEISER R NR WEISER, ID - No Corrections

SF PAYETTE R AT LOWMAN, ID - No Corrections

DEADWOOD RESERVOIR INFLOW, ID
+ DEADWOOD R BLW DEADWOOD RESV NR LOWMAN
+ DEADWOOD RESV (STORAGE CHANGE)

LAKE FORK PAYETTE RIVER NR MCCALL, ID – No Corrections

NF PAYETTE R AT CASCADE, ID
+ CASCADE RESV (STORAGE CHANGE)

NF PAYETTE R NR BANKS, ID
+ CASCADE RESV (STORAGE CHANGE)

PAYETTE R NR HORSESHOE BEND, ID
+ DEADWOOD RESV (STORAGE CHANGE)
+ CASCADE RESV (STORAGE CHANGE)

BOISE R NR TWIN SPRINGS, ID - No Corrections

SF BOISE R AT ANDERSON RANCH DAM, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)

BOISE R NR BOISE, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)
+ ARROWROCK RESV (STORAGE CHANGE)
+ LUCKY PEAK RESV (STORAGE CHANGE)

Wood and Lost River Basins

BIG WOOD R AT HAILEY, ID - No Corrections

BIG WOOD R NR BELLEVUE, ID - No Corrections

BIG WOOD R BLW MAGIC DAM NR RICHFIELD, ID
+ MAGIC RESV (STORAGE CHANGE)

LITTLE WOOD R NR CAREY, ID
+ LITTLE WOOD RESV (STORAGE CHANGE)

BIG LOST R AT HOWELL RANCH NR CHILLY, ID - No Corrections

BIG LOST R BLW MACKAY RESV NR MACKAY, ID
+ MACKAY RESV (STORAGE CHANGE)

LITTLE LOST R BLW WET CK NR HOWE, ID - No Corrections

LITTLE LOST R NR HOWE, ID - No Corrections (Disc)

Upper Snake River Basin

HENRYS FORK NR ASHTON, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)

HENRYS FORK NR REXBURG, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)
+ DIV FM HENRYS FK BTW ASHTON & ST. ANTHONY, ID
+ DIV FM HENRYS FK BTW ST. ANTHONY & REXBURG, ID
+ GRASSY LAKE (STORAGE CHANGE)

FALLS R ABV YELLOWSTONE CANAL NR SQUIRREL, ID
+ GRASSY LAKE (STORAGE CHANGE)

TETON R ABV SO LEIGH CK NR DRIGGS, ID - No Corrections

TETON R NR ST. ANTHONY, ID
- CROSS CUT CANAL
+ SUM OF DIVERSIONS ABV GAGE

SNAKE R NR MORAN, WY
+ JACKSON LAKE (STORAGE CHANGE)

PALISADES RESERVOIR INFLOW, ID
+ SNAKE R NR IRWIN, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

SNAKE R NR HEISE, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

BLACKFOOT RESVERVOIR INFLOW, ID
+ BLACKFOOT RIVER
+ BLACKFOOT RESERVOIR (STORAGE CHANGE
SNAKE R NR BLACKFOOT, ID
+ PALISADES RESV (STORAGE CHANGE)
+ JACKSON LAKE (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT, ID
PORTNEUF R AT TOPAZ, ID - No Corrections
AMERICAN FALLS RESERVOIR INFLOW, ID
+ ALL CORRECTIONS MADE FOR HENRYS FK NR REXBURG, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT GAGES

Southside Snake River Basins

OAKLEY RESERVOIR INFLOW, ID
+ GOOSE CK ABV TRAPPER CK NR OAKLEY, ID
+ TRAPPER CK NR OAKLEY, ID
SALMON FALLS CK NR SAN JACINTO, NV - No Corrections
BRUNEAU R NR HOT SPRINGS, ID - No Corrections
OWYHEE R NR GOLD CK, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR OWYHEE, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR ROME, OR
+ WILDHORSE RESV (STORAGE CHANGE)
+ JORDAN VALLEY RESV (STORAGE CHANGE)
OWYHEE RESERVOIR INFLOW, OR
+ OWYHEE R BLW OWYHEE DAM, OR
+ OWYHEE RESV (STORAGE CHANGE)
+ DIV TO NORTH AND SOUTH CANALS
SUCCOR CK NR JORDAN VALLEY, OR - No Corrections
SNAKE R - KING HILL, ID - No Corrections
SNAKE R NR MURPHY, ID - No Corrections
SNAKE R AT WEISER, ID - No Corrections
SNAKE R AT HELLS CANYON DAM, ID
+ BROWNLEE RESV (STORAGE CHANGE)

Bear River Basin

BEAR R NR RANDOLPH, UT
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
SMITHS FORK NR BORDER, WY - No Corrections
THOMAS FORK NR WY-ID STATELINE - No Corrections (Disc)
BEAR R BLW STEWART DAM, ID
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
+ DINGLE INLET CANAL
+ RAINBOW INLET CANAL
MONTPELIER CK AT IRR WEIR NR MONTPELIER, ID (Disc)
+ MONTPELIER CK RESV (STORAGE CHANGE)
CUB R NR PRESTON, ID - No Corrections

RESERVOIR CAPACITY DEFINITIONS (Units in 1,000 acre-feet, KAF)
Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. This table lists these volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage. (Revised October 1998)

BASIN/ RESERVOIR	DEAD STORAGE	INACTIVE STORAGE	ACTIVE STORAGE	SURCHARGE STORAGE	NRCS CAPACITY	NRCS CAPACITY INCLUDES
PANHANDLE REGION						
HUNGRY HORSE	39.73	--	3451.00	--	3451.0	ACTIVE
FLATHEAD LAKE	Unknown	--	1791.00	--	1971.0	ACTIVE
NOXON RAPIDS	Unknown	--	335.00	--	335.0	ACTIVE
PEND OREILLE	406.20	112.40	1042.70	--	1561.3	DEAD+INACTIVE+ACTIVE
COEUR D'ALENE	--	13.50	225.00	--	238.5	INACTIVE+ACTIVE
PRIEST LAKE	20.00	28.00	71.30	--	119.3	DEAD+INACTIVE+ACTIVE
CLEARWATER BASIN						
DWORSHAK	--	1452.00	2016.00	--	3468.0	INACTIVE+ACTIVE
WEISER/BOISE/PAYETTE BASINS						
MANN CREEK	1.61	0.24	11.10	--	11.1	ACTIVE
CASCADE	--	50.00	653.20	--	703.2	INACTIVE+ACTIVE
DEADWOOD	1.50	--	161.90	--	161.9	ACTIVE
ANDERSON RANCH	29.00	41.00	423.18	--	464.2	INACTIVE+ACTIVE
ARROWROCK	--	--	286.60	--	286.6	ACTIVE
LUCKY PEAK	--	28.80	264.40	13.80	293.2	INACTIVE+ACTIVE
LAKE LOWELL	--	8.00	169.10	--	177.1	INACTIVE+ACTIVE
WOOD/LOST BASINS						
MAGIC	--	--	191.50	--	191.5	ACTIVE
LITTLE WOOD	--	--	30.00	--	30.0	ACTIVE
MACKAY	0.13	--	44.37	--	44.4	ACTIVE
UPPER SNAKE BASIN						
HENRYS LAKE	--	--	90.40	--	90.4	ACTIVE
ISLAND PARK	0.40	--	127.30	7.90	135.2	ACTIVE+SURCHARGE
GRASSY LAKE	--	--	15.18	--	15.2	ACTIVE
JACKSON LAKE	--	--	847.00	--	847.0	ACTIVE
PALISADES	44.10	155.50	1200.00	--	1400.0	DEAD+INACTIVE+ACTIVE
RIRIE	4.00	6.00	80.54	10.00	80.5	ACTIVE
BLACKFOOT	--	--	348.73	--	348.7	ACTIVE
AMERICAN FALLS	--	--	1672.60	--	1672.6	ACTIVE
SOUTHSIDE SNAKE BASINS						
OAKLEY	--	--	74.50	--	74.5	ACTIVE
SALMON FALLS	48.00	--	182.65	--	182.6	ACTIVE
WILDHORSE	--	--	71.50	--	71.5	ACTIVE
OWYHEE	406.83	--	715.00	--	715.0	ACTIVE
BROWNLEE	0.45	444.00	975.30	--	1419.3	INACTIVE+ACTIVE
BEAR RIVER BASIN						
WOODRUFF NARROWS	--	1.50	57.30	--	57.3	ACTIVE
WOODRUFF CREEK	--	4.00	4.00	--	4.0	ACTIVE
BEAR LAKE	--	--	1421.00	--	1421.0	ACTIVE
MONTPELIER CREEK	0.21	--	3.84	--	4.0	DEAD+ACTIVE

Interpreting Streamflow Forecasts

Introduction
Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflovv forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

Most Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations, There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast; it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

To Decrease the Chance of Having Too Little Water
If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). Thcsc include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value.
There is a 30 percent chance the streamflow volume will be less than this forecast value.
90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value.
There is a 10 percent chance the streamflow volume will be less than this forecast value.

To Decrease the Chance of Having Too Much Water
If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.
10 Percent Chance of Exceeding Forecast. there is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

Using the forecasts - an example

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Death between March I and July 31.

Using the Higher Exceedence Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season. or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three Out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	

For more information concerning streamflow forecasting ask your local NRCS field office for a copy of "A Field Office Guide for Interpreting Streamflow Forecasts" or visit our Web page.

AN EQUAL OPPORTUNITY EMPLOYER

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